

# Data Storage

## Fraction in Binary

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# Fraction in Binary

## **Radix Point**

- ✓ As we have decimal point
- ✓ Digits on left side represent the whole number
- ✓ Digits on right side represent the fractional part

# Fraction in Binary

## Example

$2^2$	$2^1$	$2^0$	radi x	$2^{-1}$	$2^{-2}$	$2^{-3}$
<b>4</b>	<b>2</b>	<b>1</b>	<b>.</b>	<b>1/2</b>	<b>1/4</b>	<b>1/8</b>
1	0	1		1	0	1

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0	1	1		0	1	1

# Addition in Fractional Numbers

1101.11  
101.110

**Align Radix**

8	4	2	1	Radi x	1/ 2	1/ 4	1/ 8	1/1 6
1	1	0	1	.	1	1	0	0
0	1	0	1	.	1	1	0	0

# Addition in Fractional Numbers

1.0010  
1000.01

**Align Radix**

8	4	2	1	Radi x	1/ 2	1/ 4	1/ 8	1/1 6
0	0	0	1	.	0	0	1	0
1	0	0	0	.	0	1	0	0

# Addition in Fractional Numbers

100.10

100.0001

**Align Radix**

8	4	2	1	Radi x	1/ 2	1/ 4	1/8	1/1 6
0	1	0	0	.	1	0	0	0
0	1	0	0	.	0	0	0	1



# Summary

## **Binary Fraction**

- ✓ Representation
- ✓ Addition